REMARKS

The Title of the Invention has been amended to be clearly indicative of the invention to which the claims are directed. Claims 1 and 10 have been amended. Support for the amendments can be found in the Specification as filed, for example in paragraphs [0023], [0031], [0071], [0076] and [0081]. No new matter has been introduced by these amendments. The following addresses the substance of the office Action.

Enablement

The Examiner has rejected Claims 1-31 under 35 USC §112, first paragraph as being non-enabled. Specifically, the Examiner stated that while being enabling for the prevention or retarding of staling of baked products, it does not reasonably provide enablement for prevention or retarding of staling during the baking process, because staling is expected to commence after baking. As noted in paragraph [0003] of the present application, staling is a very complex phenomenon which is perceived as a softening of the crust, a hardening of the crumb and the disappearance of fresh bread flavor. Bread staling does occur during during baking and continues as the bread ages. For example, as noted in paragraph [0004] some publications indicate that during baking starch granules absorb water. Linear amylose chains become soluble and diffuse to the water phase and the processes described in paragraph [0004] occur, leading to staling. Thus, paragraphs [0004]-[0008] indicate that staling is initiated at least immediately after baking and even during baking and continues as the bread ages.

Therefore, Applicant asserts that claims 1 to 31 are fully enabled by the Specification as filed, and therefore their rejection under 35 USC 112, first paragraph should be withdrawn.

Non-obviousness

The Examiner has rejected Claims 1-5, 9-16 and 23-30 under 35 USC §103(a) as being allegedly unpatentable over Chung (USP 4,851,234) in view of Luebering et al. (USP 3,561,975). Specifically, the Examiner stated that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Chung to include the thermostable proteases taught by Luebering et al. to receive the benefits of a thermostable antistaling agent. Applicant respectfully disagrees.

The disclosure of Chung relates to the combined use of a protease and aqueous alcohol (i. e. ethanol} as antistaling agent. The term "protease" designates the main function of the enzyme.

It is intended to reflect the nature of natural enzyme products which are not pure and can contain various enzymes including amylases and lipases (see column 3, lines 1-5). The ethanol concentration has to be optimized, see for instance page 7, lines 18 -24. From table II, the effect of ethanol at optimal concentration is bigger than that of protease addition (compare Examples 2 to 4, carried out using the same protease content but with increasing ethanol concentrations). Higher ethanol concentrations such as in examples 5 and 6 adversely affect the dough.

According to Chung, the use of enzymes steeped in water (Example 8) give bad results. Chung is thus teaching away from using enzymes without alcohol as antistaling agent.

As stated by the Examiner (item 8 of the Office Action), Chung is silent on using thermostable protease as antistaling agent, and therefore useless to the applicant in this regard.

Luebering et al. discloses the use of a shortening-coated protease as ingredient in pie dough in order to reduce the amount of crust shrinkage during baking, while maintaining good handling properties before baking. Luebering does not concern antistaling applications. Furthermore, from the disclosed enzymes, only papain and ficin are thermostable. The preferred proteolytic enzyme for use in Luebering is papain, which deactivates at about 200°F, i.e. 93.3°C (see col. 4 lines 19- 20). Furthermore, it is known in art that papain addition in the dough results in the weakening of the gluten, making it very difficult to use in bread and certainly not suitable for the present invention (see [0009], [0010]and [0011] of the present Specification). Additionally, a very important difference is that papain is a cysteine protease and not a serine protease.

Therefore, it would not have been obvious to the one of ordinary skill in the art, at the time the invention was made, to modify the teachings of Chung to include the unsuitable thermostable proteases taught by Luebering et al. to receive the benefits of a thermostable antistaling agent, because the combination of both mentioned patents will result into the use of a protease such as papain, alone or in the presence of ethanol.

All these conditions are incompatible with the present application and provide no chance of success: papain alone negatively affects bread structure without any antistaling properties and ethanol is to be prohibited. Moreover, as mentioned, the claimed proteases belong to the enzymatic class of serine proteases.

Therefore, Claims 1-5, 9-15 and 23-30 are thus non-obvious in view of the cited patents.

The Examiner has rejected Claims 6 and 7 under 35 USC §103(a) as being allegedly unpatentable over Chung and Luebering as applied above, and further in view of RU2177994. Specifically, the Examiner stated that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Chung and Luebering et al. by including the keratinase taught by RU2177994 to receive the benefits of a thermostable antistaling agent.

RU2177994 discloses a strain, *Bacillus licheniformis*-99, encoding a hyperactive keratinase that is said to be suitable for use in food industry. The dictionary definition of keratinase is an enzyme capable of degrading keratins. This is of importance here, since random mutagenesis on a bacterial strain has been used and coupled with a selection for hyper keratinase activity (not thermostability). RU2177994 is thus silent about the thermostable properties of the mutated enzyme. It is also silent about the capacity of this protease to be used in bakery and therefore to prevent or retard staling as claimed in claims 1 to 7 of the present application. Therefore, RU2177994 fails to cure the deficiencies of the two primary references.

Thus, Claims 6 and 7 are thus non-obvious in view of the combination of the three publications.

The Examiner has rejected Claims 8, 17, 18 and 31 under 35 USC §103(a) as being allegedly unpatentable over Chung, Luebering et al. and RU2177994, and further in view of Olesen et al. (USP 6,110,508). Specifically, the Examiner stated that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Chung, Luebering et al. and RU2177994 by including the improving enzymes and emulsifiers as taught by Olesen to receive the benefits of the dough improving properties of such enzymes.

Olesen et al. disclose the use of enzymes and emulsifiers for improving the properties of dough. This practice is well known in the art (see paragraphs [0002] and [0005] of the specification as filed) and it does not cure the deficiencies of the primary references as discussed above.

For of the above, Claims 1-19 and 23-31 are non-obvious over the combinations of the cited art, and their rejection under 35 USC §103(a) should be withdrawn.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, the Applicants are not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. The Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that the Applicants have made any disclaimers or disavowals of any subject matter supported by the present application.

Co-Pending Applications of Assignee

Applicant wishes to draw the Examiner's attention to the following co-pending applications of the present application's assignee.

Serial Number	Title	Filed
11/418,376	Enzyme with xylanase activity	05-03-2006
10/535,069	Special ingredient formulation for enhancing the flavor metabolism of yeast and pacteria in sponge and dough, brews and sourdough fermentation systems	12-28-2005
10/568,044	UHT treated 100% non dairy whipping cream	08-18-2006
10/474,094	Earth alkali (hydr)oxide for preventing caking of powdered emulsifiers	04-05-2004
10/533,499	Rhamnolipids in bakery products	04-13-2006
10/556,966	Bakery products comprising carbohydrate oxidase and/or pyranose oxidase	11-16-2005
10/583,821	Liquid leaven composition	05-11-2007
10/589,154	Cold gelling pastry glaze based on pectin	05-04-2007
10/592,281	Novel xylanases and their use	07-19-2007
11/570,921	Packaged powder composition for bakery	12-19-2006
11/570,923	Nucleotide phosphatase inhibitor and coenzyme regenerating systems	12-19-2006

CONCLUSION

Applicants have endeavored to address all of the Examiner's concerns as expressed in the outstanding Office Action. Accordingly, amendments to the claims, the reasons therefor, and arguments in support of the patentability of the pending claim set are presented above. In light of the above amendments and remarks, reconsideration and withdrawal of the outstanding rejections is specifically requested. If the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, the Examiner is respectfully requested to initiate the same with the undersigned.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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Dated: March 10, 2006

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